Center for Risk Excellence

Risk Excellence Notes

Volume 1, Number 5 February/March 1999

– Special Edition –
Featuring Articles and Perspectives on Community Involvement

INSIDE THIS EDITION

AND FOR MORE INFORMATION, visit the online newsletter at our web site:

http://riskcenter.doe.gov

Here, you'll find:

- **More information on:**
  - **Selected Chemicals**
  - **Upcoming Events**
- **Past issues**
- **Color images**

TRIBAL COMMUNITY MELDS SCIENCE INTO DAILY LIVING

By Stuart G. Harris, Confederated Tribes of the Umatilla Indian Reservation (CTUIR)

The scientific method is the observation, identification, description, experimental investigation, validation, and theoretical explanation of natural phenomena. It typically proceeds from observation to hypothesis, then theory, and finally to law. Native American traditional environmental management science has traveled this exact path and has proved its worth through the survival of my people for thousands of years.

Tribal elders have explained that our behavior is a conscious response to rigorous environmental shaping. They understood the value of systematic observation and used inductive reasoning to determine the most probable reactions of very complex, interrelated ecosystem functions. The entropy of reactions is difficult to determine in open systems but has been extensively studied by our people at the ecologic unit level. The understanding of ecological thermodynamics forms the basis of our resilient and adaptive holistic environmental management science. The application of this science has been codified into law and has been distilled into daily practice. This knowledge is still transferred between generations. Attention to and application of this knowledge means personal survival and enhancement of our ecology, culture, and religion. Disregarding this knowledge can result in eating a poison, starving, degrading resources, or societal collapse.

The threads of this tradition are woven into a single tapestry that extends from the past into the future (see photo on page 2). Because the tapestry of our culture and the very fabric of our existence are truly dependent upon the health of our ecology, any impact to those environmental resources into which we have been woven is a cultural risk. If pollution affects our resources now or later, the health and well-being of everyone could suffer. A risk from nuclear or hazardous waste may ripple throughout all of our communities like a wave generated and propagated in a tapestry.

This perspective, along with our legal interest in Hanford lands as a result of our Treaty rights, sovereign status, natural resource Trusteeship, and historic use, are some of the reasons that our holistic environmental management science should be used to guide the management of the U.S. Department of Energy's nuclear legacy. This is an example of why my people bear and must respond to unique and multifaceted risks.

This material is a summary of the Opening Plenary Address, Society for Risk Analysis, Annual Meeting, Phoenix, AZ, December 7, 1998. For more information contact Stuart Harris (541/276-0105; email sharris@ucinet.com).

The Community Involvement Section continues on page 4.

LETTER FROM THE EDITORS

Whoa! We didn't know a theme of Community Involvement would garner such a lively response. It is with great pleasure that we present to our readers a 12-page edition featuring articles and perspectives on community involvement. Beginning on page four is commentary on effectively engaging stakeholders, lessons learned, current projects, and future directions of community involvement. Following this special section are our usual features on Science & Technology, Regulations & Policy, and Upcoming Events. Results of the National Cancer Institute study of radioactive fallout from bomb testing are discussed in Science & Technology.

Why is community involvement in risk assessment important? Because asking for and considering multiple perspectives on potential problems bring about solutions that might otherwise be overlooked. Experts tend to focus fairly narrowly on what they are expert about, leaving the project with sets of partial views. When the community is drawn in, a more complete picture is formed, thereby enhancing the decision-making.

We thank all of you for the information you submitted and hope that this issue sparks further exchange and interest for you in your community — be it your neighborhood, church, or the halls of our government.

Mary Jo Acke Ramicone
U.S. Department of Energy
Center for Risk Excellence

Nancy Lane
Lane Environmental, Inc.

SPEAK YOUR MIND

Recent literature in professional journals related to risk assessment and risk management shows a disturbing trend in risk communication and public involvement. It seems we have yet to grow beyond the mind set that "if we just explain it well enough, they'll agree with us." This mentality shows itself in subtle ways, such as advice to professionals on how to be sensitive to stakeholder concerns. To those who believe this tenet, I have three words:

Get over it.

As a risk communication practitioner, I firmly believe that any technical subject can be explained to those who are not experts in it. However, just because we explain things beautifully doesn't mean that everyone is going to agree. Disagreement doesn't necessarily mean misunderstanding.

Disagreement also shouldn't be avoided. Some ideas are bad ideas. Some perspectives are too narrow. Sometimes cultures clash. Sometimes there are bigger issues at stake—power, representation, ethics.

In true public involvement, all sides learn from each other, and better decisions result. No one side has all the answers. Nobody knows everything.

If you think you do, get over it.

Regina Lundgren
Research Scientist
Pacific Northwest National Laboratory

ARTICLES, LETTERS, COMMENTS, and QUESTIONS

Submittal of articles and information for *Risk Excellence Notes* is encouraged and should be sent to Mary Jo Acke Ramicone or Nancy Lane at:

Mary Jo's
Email: maryjo.acke@ch.doe.gov
Phone: 630/252-8796
Fax: 630/252-2654

Nancy's
Email: lane@oneworld.owt.com
Phone: 509/942-9053
Fax: 509/942-0743

Send address changes or other mail to:
Risk Excellence Notes
c/o Lane Environmental, Inc.
P.O. Box 925
Richland, WA 99352

This photo shows a Native American woman drying fish fillets in the late 1800s - a technique still practiced today.

WHAT'S HAPPENING AT THE Center for Risk Excellence

CULTURAL CONSIDERATIONS IN RISK ASSESSMENT: NEW GROUND

As the U.S. Department of Energy (DOE) engages with regulators, Tribal Nations, and stakeholders in making cleanup decisions, it is faced with incorporating the concerns and concepts of many cultures. DOE encounters this issue for two reasons. First, it is expected that nuclear waste will need to be managed for hundreds of years, affecting many generations of life. Second, long-term management and cleanup may disrupt current cultural artifacts or systems.

In the past 30 years, numerous statutes and laws have been passed by Congress to protect cultural resources of Native Americans. In the context of these laws/Acts, cultural resources typically included sacred places, burial grounds, traditional use areas, archeological sites, and land forms mentioned in legends. But the field is changing — instead of viewing cultural resources as static sources of historical and scientific information, we are beginning to understand their part in indigenous cultural systems of today. If Native Americans are to retain their way of life, they must be able to access all of their cultural resources.

The standard risk assessment paradigm focuses on human and ecological exposure pathways and health endpoints. Now we must break new ground. Our risk assessments and our risk management programs must include impacts to culture. We have a process for identifying and protecting archaeological and historical sites located on Federal lands. Now we must have a process to consider the aspects of culture.

The DOE's Center for Risk Excellence has been charged with supporting the Hanford Site (Richland, WA) Groundwater/Vadose Zone Integration Project in the preparation of a Risk/Impact Technical Report and a Risk Science and Technology Roadmap. The goal of (and DOE's commitment to) the Integration Project is to assure the protection of water resources, the Columbia River environment, river-dependent life, and users of the Columbia River resources (see article by Dru Butler on page five). Credible data and predictive analytical tools are needed to assess impacts associated with remedial options proposed by DOE. The challenge for the Center for Risk Excellence is to propose quality of life assessment methods that could be employed in assessing risks. It is recognized that the actual process employed must be determined through a dialogue with the potentially affected cultural groups.

It is clear that we have a difficult task before us, as we transition our risk assessment and risk management activities to a new mold. The challenges are many, but the rewards will be immense.

Alvin L. Young
Director, Center for Risk Excellence

RISK PLAN AVAILABLE FOR COMMENT

By Margaret MacDonell, Argonne National Laboratory

A preliminary working draft of the Center for Risk Excellence (CRE) "Risk Plan" for the Hanford Site's Groundwater/Vadose Zone Project (Project) is available for review and comment. The plan provides the initial views and recommendations of the CRE Team that met at Hanford December 3-5, 1998. It elaborates on the need for credible data, predictive analytical tools, and new methods to assess risk/impacts to the region's water resources from proposed remedial actions by the Department of Energy at Hanford.

The final report is to be issued March 31, 1999, and is intended to be incorporated into the plans for the Project. CRE is requesting comments be made and strongly encourages remarks prior to March 1 for incorporation, as appropriate.

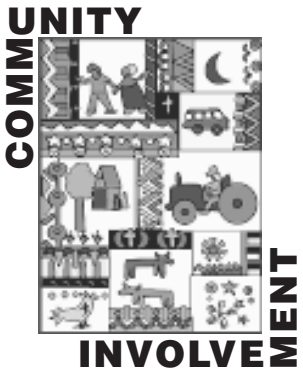
The report entitled, Preliminary Working Draft of the Hanford Groundwater/Vadose Zone Risk/Impact Technical Report, is available at http://www.riskcenter.doe.gov/gwvzrisk. Please send comments to R. Douglas Hildebrand, U.S. Department of Energy, P.O. Box 550, Richland, WA, 99352; or email to r_d_doug_hildebrand@rl.gov.

WHAT IS THE CENTER FOR RISK EXCELLENCE?

The Center for Risk Excellence was established in 1997 to help the U.S. Department of Energy (DOE) address risk issues associated with their environmental management activities. Located in the Chicago Operations Office, the Center provides field-based risk expertise and resource coordination to those in Headquarters, the Field/Operations Offices, and outside the agency. With a Federal staff of five, the Center has created an extended organization combining DOE staff from each of its field offices (i.e., Board of Directors), DOE laboratories (i.e., Support Team), contractors, and other organizations.

For more information, call 888-DOE-RISK or visit the web site http://riskcenter.doe.gov.

– SPECIAL EDITION –



EFFECTIVELY ENGAGING STAKEHOLDERS

BUILDING CONSENSUS

By Mary Jo Acke Ramicone, Center for Risk Excellence

Although not brand new, the report, *Building Consensus through Risk Assessment and Management of the Department of Energy's (DOE) Environmental Remediation Program (1994)*, from the National Academy of Sciences is well worth reading.

In 1993, former DOE Assistant Secretary for Environmental Restoration and Waste Management, Thomas Grumbly, asked the Academy to review the Department's environmental remediation program, specifically, the use of risk assessment as an aid to decision-making. In response, the Academy formed a special committee which conducted a workshop on this subject and included stakeholders; Native Americans; state, local and federal governments; and DOE. With the workshop results, background readings, and their own knowledge, committee members developed findings and recommendations.

In summary, the committee believes that a comprehensive risk assessment process is absolutely essential for dealing effectively with risks at DOE facilities. With rigorous, consistent, and continuous inclusion of stakeholder groups in the effort, risk assessment can become an important element of consensus building for key decisions in the remediation of DOE sites. Through this consensus-building process and perhaps through a new organizational setting for risk assessment, the credibility of DOE can be improved.

Points that all workshop attendees supported included:

- Lack of trust in DOE and its site operators is a major impediment to reaching consensus;
- Multiple parties (stakeholders) need to be involved throughout the whole process—including planning;
- Because there are differences in values and philosophical views, an open, clear, equitable, and inclusive process is essential; and
- The absence of complete information should not be an excuse for lack of progress in site remediation.

This report can be found at http://www.nap.edu/readingroom. Enter the title under "Search". Or call the National Academy Press (800/624-6242) to obtain a copy.

THEN AND NOW

By Martin Edelson, Ames Laboratory

Five years have elapsed since the National Academy of Sciences report. What has happened since then? Tom Marshall, a member of the Rocky Flats Citizens Advisory Board (CAB) and the Rocky Mountain Peace and Justice Center, believes that "citizens have more access to information than they've ever had before," but the "door seems only half-open." He muses that it sometimes seems that the U.S. Department of Energy (DOE) isn't really interested in following community positions.

For example, the DOE, the U.S. Environmental Protection Agency, and the Colorado Department of Health proposed residual soil contamination levels for radionuclides that seemed too high a level to many near Rocky Flats. When citizens questioned how residual levels were derived they were told the algorithms were proprietary and that they just had to accept the results! DOE went ahead with the proposed levels, but the citizens protested.

The CAB, local government, and public interest organizations won support from then DOE Assistant Secretary Alvin Alm to create the Rocky Flats Soil Action Level Oversight Panel and independently recommend an acceptable soil action level. This group is overseeing an independent analysis of the DOE calculations with on-going peer review that lends crediblity to the process. The Panel hopes to integrate citizen viewpoints early in the process and "demystify" risk modeling.

Marshall believes that community involvement enriches the risk assessment process and that DOE attitudes have progressed but still have a long way to go.

LESSONS LEARNED

INVOLVING THE COMMUNITY

By Lori Ramonas, Technical Resources International, Inc., Roger Briggs and Ken Murphy, U.S. Department of Energy

The U.S. chemical manufacturing industry has developed a unique approach, called Management Systems Verification (MSV), for evaluating environment, safety, and health (ESH) management systems. The heart of the MSV process is a series of open-ended interviews that 1) employ a panel-to-panel dialogue approach, 2) compel the engagement of top management from the outset, and 3) directly involve the community.

More than 50 chemical companies have undergone an MSV. Many company executives have commented that the direct involvement of community representatives was the most valuable aspect of the MSV, because the community offered a different, valuable perspective; and trust and credibility were strengthened through the process. Some of the better practices and tools identified by MSV have just been pub-

lished (*Responsible Care - Examples of Excellence*). Call 301/617-7824 for a copy.

The Hanford Site recently conducted an MSV Pilot that focused on the site's Chemical Management System. The Hanford Pilot paralleled the MSV process closely, and a member of the interviewer panel "role played" a member of the public. As a result of the successful pilot experience, participants recommended the involvement of community representatives in upcoming Integrated Safety Management verifications at the site.

For more information contact Roger Briggs (509/376-5416; email Charles_R_ Roger_ Briggs@rl.gov).

NATIVE AMERICANS RESPOND TO THE TRANSPORTATION OF LOW LEVEL RADIOACTIVE WASTE

By Diane Austin, University of Arizona

The Bureau of Applied Research in Anthropology and the American Indian Transportation Committee (AITC) recently released a report for the Department of Energy/Nevada Operations Office (DOE/NV). The report resulted from a two-year study involving 29 tribes and tribal subgroups. The AITC is a subgroup of the Consolidated Group of Tribes and Organizations, a consortium of tribes who work with DOE personnel to assist the agency in complying with laws and policies regarding Native Americans. The study focused on Native American perceptions of impacts and risks of Low Level Radioactive Waste (LLRW) transportation along three routes under consideration by the DOE/NV. It was unique in that Native Americans were involved in all phases of the research, the focus was on Native American travel on the proposed routes and LLRW transportation across Indian land, and the study was designed to consider individual, social, and cultural impacts. The report discusses the histories of the participating tribes; the results of interviews with 149 tribal representatives; Native American concerns and experiences related to transporting LLRW and the potential for mitigating possible impacts; jurisdictional issues regarding transportation across and near tribal land; and Native American perceptions of radiation. Among the conclusions of the study are: 1) even if they do not live along the proposed routes, Native Americans frequently travel along the routes and are potentially impacted by LLRW transportation because the routes traverse their traditional territories; 2) the natural and cultural resources that continue to be essential to the lives of many Native Americans are potentially impacted by LLRW transportation; and 3) in the culture of some of the participating Native Americans, radiation is understood to be an "angry rock" that can cause harm when used for inappropriate purposes.

For more information contact Diane Austin, Bureau of Applied Research in Anthropology (520/621-6282; email daustin@u.arizona.edu) or Richard Stoffle (520/621-6282; email rstoffle@u.arizona.edu).

INTEGRATING STAKEHOLDERS INTO RESEARCH

By Deirdre Grace and Lynne Fahey McGrath, Consortium for Risk Evaluation with Stakeholder Participation (CRESP)

One continuing challenge for CRESP has been to augment the traditional methods of scientific inquiry with a process that involves stakeholders. The CRESP experiment is to determine if stakeholder involvement in our research will allow better hypothesis generation and knowledge that is of greater relevance to stakeholders.

To evaluate the success of this experiment, researchers were interviewed to document the ways in which stakeholders have been involved. It was found that stakeholders have been active participants in many research initiatives. Both the level and type of effort contributed by stakeholders, and the point of impact in research projects varied widely. Some projects were generated directly from stakeholder questions, while others had stakeholder review during the research process.

CRESP scientists felt that stakeholders had opened exceedingly fruitful paths of inquiry that may not otherwise have been explored. Through this involvement, investigators gained insights into community issues and local practices that allowed better hypothesis formation and better science.

For more information contact the outreach and communication task group leaders, Deirdre Grace (206/616-7378) or Lynn Waishwell (732/445-0920) or via the internet at http://www.cresp.org.

CURRENT PROJECTS

GROUNDWATER/VADOSE ZONE INTEGRATION PROJECT: AN OPEN PROCESS

By Dru Butler, Bechtel Hanford, Inc.

In December 1997, the Department of Energy Headquarters (DOE-HQ) and DOE-Richland (DOE-RL) initiated the Groundwater/Vadose Zone Integration Project (Project) to protect the Columbia River. The Project was created because:

- The fragmentation of technical work conducted over four decades on separate projects and by multiple contractors resulted in critical knowledge gaps and inefficiencies;
- Individual cleanup project endpoints must lead to a defensible endstate for Hanford when the cleanup mission is complete;
- There is a need to increase public trust and credibility in Hanford cleanup; and
- Receptor impacts are at the heart of technical risk-based cleanup decisions. Cultural and economic impacts must be adequately evaluated in this context.

Hanford's community of affected people is large, passionate, diverse, and geographically dispersed, but they are all united by a concern to protect the Columbia River. A fully open, acces-

(Continued on Page 6)

Groundwater/Vadose Project
(Continued from Page 5)

sible, and inclusive Project involvement process will be used to begin building trust and support. Opportunities for involvement range from the sharing of information, to consultation, to collaboration. Here are some of the ways the Project has worked to gain involvement:

1) Routine Project Team meetings are open to our Project Team, regulators, Tribal Nations, and stakeholders to review progress and discuss issues. Detailed meeting notes are prepared and widely distributed;
2) A Project web site lists meeting notes, documents, and share times and locations for Project events. The web site is http://www.bhi-erc.com/vadose;
3) The Project sponsored a series of technical, scientific working meetings throughout in the summer of 1998, and insisted that they be opened to the public.
4) A highly technical Expert Panel was convened to provide peer review for the Project; their meetings are open and allow time for public input and discussion;
5) The Hanford Advisory Board, a 32-member Site Specific Advisory Board, is kept informed and involved as the Project progresses; and
6) One-on-one meetings with regional stakeholder groups, interested citizens, and regulatory agencies are planned for January and February to discuss the Draft Project Specification/Long Range Plan. This Draft is in a public comment period (January – March 12, 1999).

Challenges include how to adequately involve regional stakeholders in frequent Project meetings when it is not possible to pay their travel costs to attend meetings, how to make decisions in the face of uncertainty and lack of consensus, and how to appropriately involve regulators in the project.

For more information, contact Dru Butler (509/375-4669; email dhbutler@bhi-erc.com).

VARIED APPROACHES USED TO INVOLVE THE PUBLIC OVER TIME

By Ann Lockhart, Colorado Department of Public Health and Environment

Maintaining public interest and public involvement in a long-term project is a major challenge, as the team conducting the Historical Public Exposures Studies on Rocky Flats has found. In mid-1990 the Colorado Department of Public Health and Environment began a to identify potential off-site health impacts of past contaminant releases from Rocky Flats, a former nuclear weapons plant. The team has sought active involvement by the public. Many have contributed vital historical information needed for the study or expressed specific concerns.

When the project started, people often got involved because of anger or concern. Once their information needs were met about the types of contaminants and historical releases that occurred, and they became acquainted and comfortable with the research team and process, some dropped out. Some interested neighbors said they dropped out when they felt vocal activists dominated early meetings. They kept up with the project through the quarterly newsletter. Fewer have attended the public meetings over time, especially since the later meetings have primarily provided refinements of previously presented information.

The study team found that few people will stay involved over an extended period of time. Most people want to know what's in their back yards and the potential health effects. People drop in and out of the process. Burnout happens, not only among the interested public, but also among the research and communication team members. New and varied approaches have been tried, and relationships with key groups are maintained, even if their active participation lags. The outreach approaches have included publishing a quarterly newsletter; developing fact sheets and 10 technical topic papers to explain scientific issues simply and clearly; sponsoring a one-day symposium for physicians, environmental scientists and journalists; and creating a web site for easy public access to basic information. In addition, the team has varied the speakers, formats, locations and invitees to its public meetings.

For more information contact Ann J. Lockhart, senior public information officer,Colorado Department of Public Health and Environment (303/692-2640; email ann.lockhart@state.co.us).

Left to Right: Margaret MacDonell (Argonne National Laboratory), Pam Doctor (Bechtel Hanford, Inc.), Al Young (U.S. Department of Energy), Bill Rickards (semi-retired), and Barbara Harper (Yakama Indian Nation) toured the Hanford Site Arid Lands Ecology Reserve while working together on the Grownwater/Vadose Zone Integration Project.

RESTORATION ADVISORY BOARD CAUCUSES

By Saul Bloom, Restoration Advisory Board Community Member

The National Caucus of Restoration Advisory Board (RAB) Community Members is a voluntary grass roots network of community representatives serving on RABs, Community Advisory Boards (CABs), Site Specific Advisory Boards (SSABs), and other citizens advisory committees overseeing military pollution remediation and source reduction. The goal of the Caucus is to ensure the proper cleanup of their local military bases and create better regional, state, and national cleanup policy and practice. The Caucus speaks only for its participants and not all RABs or RAB members. The Caucus' chief objectives:

- Educate to provide RAB members with technical training and access to technical support to promote community-safe cleanups;
- Organize to bring RAB members together (from a current 14% participation to 100% participation from RABs; and
- Advocate community-safe cleanups, better RAB management, and public participation, and responsible national policy on base cleanup and public health.

A January 30 - February 1, 1999, Caucus meeting in San Francisco will include discussions on risk assessment and risk management. The Caucus meeting will dovetail with the February 2-3 meeting of the Pentagon's Defense Environmental Response Task Force (DERFT). DERTF is the Federal Advisory Committee for the Pentagon's base closure cleanup program. Its members include the U.S. Environmental Protection Agency, the National Association of Attorney Generals, the Western Governors Association, the Urban Institute, and the Environment and Energy Study Institute. The DERTF process offers an important opportunity to bring community voices to military planners and advisors.

For more information about the National Caucus of Restoration Advisory Board Community Members, please contact Jeff Lehman at Arc Ecology (the Caucus' Secretariat) 833 Market Street, Suite 1107, San Francisco, CA 94103 (phone 415/495-1786; fax 415/495-1787; email arc@igc.apc.org).

SITE SPECIFIC ADVISORY BOARD PROGRAM

By Earle Dixon, Nevada Test Site Community Advisory Board Technical Advisor

Various stakeholder organizations regularly provide input to the U.S. Department of Energy (DOE) decision-making process through the Site Specific Advisory Board (SSAB) Program. These boards were first suggested as a mechanism to include public concerns in cleanup-related activities in the 1991 Office of Technology Assessment report, *Complex Cleanup.* The Interim Report in 1993 by the Federal Facilities Environmental Restoration Dialogue Committee (Keystone Committee) also recommended the creation of site specific advisory boards. With guidance from the 1972 Federal Advisory Committee Act (FACA), the EM SSAB Charter was created and approved in 1994. Since then, the Department has established 12 boards under the EM SSAB charter. The boards are generally made up of volunteer citizens from the local community and ex officio representatives from various levels of government. A recent accomplishment of the SSAB program was the three-day seminar in Las Vegas, Nevada, to discuss defense low-level waste (LLW) disposition options (see Risk Excellence Notes Oct/Nov 1998 at http://www.riskcenter.doe.gov/ or call 509/942-9053 for a copy).

U.S. DEPARTMENT OF ENERGY (DOE) ENVIRONMENTAL MANAGEMENT (EM) LOCAL SITE SPECIFIC ADVISORY BOARDS (SSAB)

FERNALD CITIZENS ADVISORY BOARD (CAB)
Crystal Samo 513/648-6478 or 703/971-0030

HANFORD ADVISORY BOARD
Donna Sterba 509/943-1804

IDAHO SSAB
Wendy Green Lowe 208/522-1662

NORTHERN NEW MEXICO CAB
Ann DuBois 505/665-5048

MONTICELLO REMEDIAL ACTION SSAB
Michelle Smith 970/248-6583

NEVADA COMMUNITY ADVISORY BOARD
Earle Dixon 702/895-1453 or
Carolyn Gardner 702/633-5300 ext. 232

OAK RIDGE RESERVATION EM SSAB
Sheree Black 423/241-3665

PADUCAH GASEOUS DIFFUSION PLANT SSAB
Jeannie Brandstetter, 502/441-5105

PANTEX CAB
Becky Lopez, 806/372-3311

ROCKY FLATS SSAB
Ken Korkia, Deb Thompson or
Erin Rogers, 303/420-7855

SANDIA CAB
Tonya Covington, 505/244-1702

SAVANNAH RIVER SITE CAB
Dawn Haygood, 800/249-8155 or 803/725-9668

DOE/EM HEADQUARTERS
Karol Hazard, 202/586-7926

RISK MANAGEMENT WORKING GROUP

By Jim Moore, Savannah River Site Citizens Advisory Board

A Risk Management Working Group (Working Group) has been formed as a sub-group to the Risk Management and Future Use Subcommittee of the Savannah River Site (SRS) Citizens Advisory Board (CAB). The Working Group is to analyze and understand the risk management at the SRS by reviewing risk assessments, the roll-up of the risk assessments into the Integrated Priority List, the balance of compliance versus risk, and the communication of relevant risk to the public.

Members of the Working Group are

(Continued on Page 8)

Risk Management Working Group
(Continued from Page 7)

individuals that attended public meetings and were interested in learning and trying to understand more about risk at the site. The members include the public, CAB members, representatives from the South Carolina Department of Health and Environmental Control and the U.S. Environmental Protection Agency (EPA). U.S. Department of Energy (DOE) and Westinghouse Savannah River Company provide support to the Working Group.

The goals of the Working Group are:

1) Define risk;
2) Determine how risk is defined and determined per program;
3) Recommend improvements in risk communications;
4) Determine how risk is balanced with other factors in making decisions;
5) Determine the analysis/model/process used to determine risk per program;
6) Review risk information available offsite (Consortium for Risk Evaluation with Stakeholder Participation, Center for Risk Excellence, other sites);
7) Identify how risk is defined/determined at other sites;
8) Recommend improvements in the risk management process; and
9) Recommend and provide information to CAB.

Teams created to meet these goals include:

- Risk analysis: Determine how risk is defined and determined per program (analysis/model/process);
- Risk communications: Recommend improvements in risk communications;
- Non-risk decisions: Determine how risk is balanced with other factors in making decisions; and
- Off-site risk: Review risk information available off-site.

For information, contact Virginia Kay (803/725-5752, virginia.kay@srs.gov) or Jim Moore (803/725-5663, jim02.moore@srs.gov).

FUTURE DIRECTIONS

COMPREHENSIVE NATIONAL LEAD ABATEMENT STRATEGY NEEDED

By Lenny Siegel, Center for Public Environmental Oversight

Despite the efforts of many dedicated people, the national response to lead pollution remains fragmented and inadequate. No matter how the U.S. Environmental Protection Agency (EPA) resolves key disputes in the proposed Lead Rule (TSCA 403), much more will need to be done. Lead is an area where everyone seems to agree that pollution causes significant health — and indirectly, economic — problems. Its concentration in the inner cities condemns poor and minority children to disproportionate rates of illness and developmental disorders, reinforcing the cycle of poverty. In his article, *Lead in the Inner Cities,* in the January-February issue of American Scientist (http://www.amsci.org/amsci/ and click on "Forum"), Howard Mielke argues: 1) that lead intake is a serious threat to the health of children, particularly in the inner cities; 2) the ingestion of lead from soil is the principal pathway; and 3) lead paint is typically a major source of lead in soil. But in central cities, the source of lead contamination in soil is more likely to be gasoline exhaust from leaded fuels.

If these findings are true, the U.S. should develop, fund, and implement a national lead strategy that places a priority on the remediation of lead-contaminated soil, regardless of the source. If indeed auto traffic is such a major source, then we must develop funding sources that do not rely only upon property owners to abate the problem. Responses should be triggered by the concentration and bioavailability of the contamination, not by the source or ownership of the problem. This probably will require the development of new state and federal statutes, impractical in today's political climate. But concerned parties can lay the groundwork for a model, comprehensive lead response law without waiting for Congress to act. Failure to move forward only perpetuates one of the nation's most flagrant examples of social and environmental injustice.

For more information, contact Lenny Siegel, Director, Center for Public Environmental Oversight, c/o PSC, 222B View St., Mountain View, CA 94041 (650/961-8918 or 650/969-1545; email lsiegel@cpeo.org or see the web site http://www.cpeo.org).

IMPROVING THE MANAGEMENT OF ENVIRONMENTAL STAKEHOLDER PROCESSES

By Terry F. Yosie, Ruder Finn — Washington D.C.

The future evolution of stakeholder processes will be shaped, in part, by how convening organizations and stakeholders respond to a number of current challenges, including:

Management — adapt quality management techniques including improved facilitator training and professional and ethical standards; build the capacity and infrastructure for involving stakeholders in decision-making; and better document best practices to make them available.

Metrics — make greater use of planning goals, progress indicators, process milestones and documentation of results and costs to improve confidence in the process.

Science — provide greater interaction between scientists and stakeholders to develop factual information compatible with the needs of non-technical participants.

Integration — establish more transparent and explicit ground rules so that existing decision-making processes are better prepared to implement agreements reached through stakeholder-based deliberations.

Improved decision-making — reach an agreement over evaluation criteria.

The increased use of stakeholder

processes represents a search to revitalize the nation's environmental institutions and decision-making process after several decades of highly contentious environmental debates. A key to such revitalization lies in the ability to move beyond largely symbolic debates over good and evil toward more accessible and practical solutions that improve environmental quality by integrating the best information currently available with society's interests and values.

Dr. Yosie is Executive Vice President of Ruder Finn-Washington (202/974-5078) who previously served as Director of U.S. EPA's Science Advisory Board and as Vice President for Health & Environment at the American Petroleum Institute. Information presented in this article is based upon a study conducted by the author and Timothy D. Herbst entitled "Using Stakeholder Processes in Environmental Decision-making: An Evaluation of Lessons Learned, Key Issues, and Future Challenges" (September, 1998). For a copy of the study contact Mina Ulysse at 202/833-2131, ext. 3015. Or try RiskWorld's web site http://www.riskworld.com.

ISSUES OF THE SITE SPECIFIC ADVISORY BOARDS

By Billy Grayson, Intern – U.S. Department of Energy Center for Risk Excellence

Meeting minutes, survey results, formal policy recommendations, newsletters, and other documents (more than 300 total) from the 12 U.S. Department of Energy (DOE) Site Specific Advisory Boards (SSABs) have been reviewed and some common themes are emerging. The following five issues are shared by all the boards:

- Public Health & Safety;
- Stewardship & Future Land Use;
- Public Education & Involvement;
- Risk Prioritization & Efficiency; and
- Relations Between the SSABs and DOE Headquarters.

Safety was the most universal concern, with a focus on actual safety measures and education for the public on important issues.

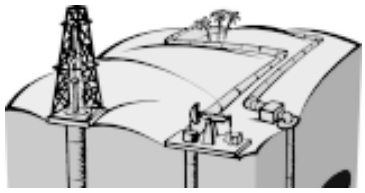
REGULATIONS & POLICY

RISK-BASED CORRECTIVE ACTION FOR CHEMICALS

The U.S. Department of Energy's (DOE) Office of Environmental Policy and Assistance (EH-413) has issued a new guidance document entitled Risk-Based Corrective Action (RBCA). This guide explains risk-based decision-making and the RBCA process for environmental restoration of chemically contaminated sites (see Figure 1). It presents an introductory guide to using risk-based decision-making at DOE facilities and discusses how the process can be used in conjunction with other DOE streamlining initiatives to reduce environmental restoration costs and schedules.

Figure 1: Example of Contaminated Site

The RBCA document is available for viewing or downloading under "Policy and Guidance" at http://tis-nt.eh.doe.gov/oepa. The document number is DOE/EH-413-9815, November 1998.



PIPELINE RISK MANAGEMENT DEMONSTRATION PROGRAM

By Beth Callsen, U.S. Department of Transportation

As regulators of our nation's interstate pipeline system, the Department of Transportation's Office of Pipeline Safety (OPS) has initiated a Pipeline Risk Management Demonstration Program to evaluate an alternative to a "one-size-fits-all" set of prescriptive regulations. Under this Program, selected pipeline operators define the most important risks on their particular systems and define the best set of activities to control their risks. If the company can demonstrate that it can 1) identify and manage its own pipeline-specific risks; 2) propose risk control activities that produce superior safety and environmental protection over compliance with regulations; and 3) measure that superior risk-reduction is actually being achieved, then the operator can implement the pipeline-specific risk management program in lieu of complying with current regulations.

With this approach, operators can customize their safety and environmental protection programs to specific design and operating conditions, use the experience and expertise of employees to define problems and solutions, allocate resources in the most cost-effective manner, and identify new and more effective means of managing risks not yet allowed under current regulations.

For more information contact Beth Callsen (202/366-4572) or visit the web sites http://www.cycla.com/primis or http://www.ops.dot.gov.

SCIENCE & TECHNOLOGY

Note from the Editors: *The National Cancer Institute released its study of radioactive fallout from bomb testing in Nevada in October 1997. The report "Estimated Exposures and Thyroid Doses Received by the American People from iodine-131 in Fallout Following Nevada Atmospheric Nuclear Bomb Test" is published on the internet in full at http://rex.nci.nih.gov/massmedia/Fallout/contents.html. This report was mandated by Congress under Public Law 97-414. Results include nationwide estimates of iodine-131 doses to the thyroid that would have been received by individuals from fallout. The report is not intended to assess risks for thyroid cancer from these exposures. Instead the results are meant to be linked to epidemiological studies to estimate thyroid cancer risk. It recommended that public health officials initiate an epidemiological investigation on the association between iodine-131 exposure and thyroid cancer. Following are the results of one epidemiologic study and comment on the report.*

THYROID CANCER IN MISSOURI

By Eduardo Simoes, Missouri Department of Health

In response to the above mentioned National Cancer Institute (NCI) study, the Missouri State Department of Health conducted a thyroid cancer study. Using incidence data from the Missouri Cancer Registry (1985-1992) and mortality data from the Missouri Department of Health Centers for Health Information and Epidemiology (1985-1995), we computed directly standardized age-adjusted thyroid cancer incidence and mortality rates for the state, "fallout" path counties, and three age-cohorts of those aged 20 and younger between 1950-1960. We examined trends in incidence and mortality using log-linear models, and estimated the statistical differences between observed and expected incidence and mortality counts for the study areas. In Missouri, possible exposure to iodine-131 was not associated with increased thyroid cancer morbidity and mortality between 1985 and 1995.

Incidence rates were higher among whites and women with mortality rates higher only among whites. Incidence increased and mortality remained level for the study periods. Patterns and trends by gender, race and age groups in Missouri were similar to those reported for the country although somewhat lower.

In Missouri, epidemiological analytical studies on thyroid cancer and iodine-131 exposure association are likely to be uninformative, because both are rare, and estimates of individual past exposure are not feasible. Such epidemiological analytical studies are challenging because of small sample sizes.

For more information contact Eduardo Simoes (573/876-3203; email SimoeE@mail.health.state.mo.us).

BOMB FALLOUT AND THYROID CANCER: STATISTICAL SHEEP IN REAL WOLVES' CLOTHING*

By Russ Brown, Argonne National Laboratory

The National Cancer Institute (NCI) deposition and dose estimates provided the basis for excess thyroid cancer estimates ranging from 7,500-75,000; 11,300-212,000; and 4,000-608,000. Five Idaho counties, fifteen Montana counties, and two Utah counties were listed among the twenty-four counties with the highest estimated thyroid doses.

The deposition and dose estimates for the 3066 U.S. counties were based on sampling at only 40 to 95 locations, and that sampling did not measure iodine-131. The deposition and dose values for the other 3000 counties were estimated on the basis of assumptions and extrapolations, in some cases from locations that were hundreds of miles away. NCI deposition tables had significant inconsistencies.

The cancer estimates were based on a meta-analysis of five different populations of children subjected to external radiation, treated in five different dose ranges, with five widely varying results. Proposed guidelines for the pooling of data from different studies would have eliminated at least three of the five studies. The NCI calculation used the excess relative risk value from this study, 7.7 ERR/Gy (95 percent Confidence Limit: 2.1 to 28.7), as a basis for estimation of the carcinogenic effects of iodine-131. However, published literature suggested that the relative effect of iodine-131 (to that of external radiation) on thyroid cancer induction ranged from zero to a theoretical maximum of one-third that of external radiation. Application of the NCI prediction method and parameters to a large Swedish population treated with diagnostic doses of iodine-131 yielded a value of 10.5 excess thyroid cancers where none were found.

A review of all U.S. thyroid cancer mortality data for the thirty-year period following bomb testing identified major clusters of significant excess thyroid cancer mortality, including eight contiguous counties in urban New York and New Jersey, four in the Cleveland area of Ohio, and three in the Chicago area, among others. None of these regions were in the NCI "high dose" areas. No significant excesses were found in Idaho, Montana, or Utah among the most sensitive age-groups throughout the thirty-year period following atmospheric weapons testing.

For more information, contact Russ Brown (208/524-4409; email russb@srv.net).

A related reference is the National Academy of Sciences (NAS) NewsReport at http://www2.nas.edu/newsrpt/. NAS reports that Institute of Medicine (IOM) and National Research Council committees were asked to examine the possible strategies to respond to fallout exposure. The NAS article states that "in examining analyses from several cancer registries, the IOM and Research Council committees found little evidence of widespread increases in thyroid cancer as described in the NCI report".

* Based on the paper presented at the ASME Symposium, "Focus on Environmental Communications", Miami, FL (December, 1997)

UPCOMING EVENTS

Feb. 28 - Mar. 4: Waste Management '99, Tucson, AZ. For more information contact WM Symposia, Inc. (520/624-8573; email abstracts99@wmsym.org).

Mar. 8-11: 9th Annual West Coast Conference on Contaminated Soils and Water, Oxnard, CA. For more information, visit the web site http://www.aehs.com/WCC/wchomepage99.htm or call Barbara Indermitte (413/549-5170; email bknowles@aehs.com).

Mar. 9-11: Basic Risk Communication Workshop, Baltimore, Md (Brookshire Hotel). For more information, call Kelly Spearman, U.S. Army Center for Health Promotion and Preventive Medicine, (410/436-7710, ext. 2953).

Mar. 14-18: 38th Annual Meeting of Society of Toxicology, New Orleans, LA. For more information call 703/438-3115; email sothq@toxicology.org; web site http://www.toxicology.org.

Mar. 14-18: Symposium for the Application of Geophysics to Environmental & Engineering Problems (SAGEEP), Oakland, CA. For more information visit the web site http://www.sageep.com.

Mar. 21-25: Persistent, Bioaccumulative, Toxic Chemicals, Anaheim, CA. For more information contact Robert Lipnick, American Chemical Society (202/260-1274; email lipnick.robert@ epa.gov).

Apr. 11-14: Environmental Decision-making Research, Knoxville, TN. For more information, see the U.S Environmental Protection Agency – Office of Water web site http://www.epa.gov/OWOW/estuaries/new.htm.

Apr. 12.-15: 1999 Conference - Toxicology & Risk Assessment, Wright-Patterson AFB, OH. For more information, contact Lois Doncaster (937/235-5293 or 937/255-5150 ext. 3140; web site http://www.epa.gov/ncea/toxconf.htm).

Apr. 19-22: ASTM 9th Symposium on Environmental Toxicology & Risk Assessment, Seattle, WA. For more information contact Fred Price (703/902-3152; email price_fred@bah.com).

Apr. 19-22: The 5th International Symposium: In Situ and On-Site Bioremediation, San Diego, CA. For more information contact the Bioremediation Symposium Coordinator, The Conference Group (800/783-6338 or 614/424-5461; email conference group@compuserve.com).

Apr. 23-30: American Occupational Health Conference, New Orleans, LA. For more information contact the American Association of Occupational Health Nurses (770/455-7757; email aaohn@ aaohn.org; web site http://www.aaohn.org).

May 2-5: National Summit on Sustainable Development, Detroit, MI. For more information contact the Summit Coordinator (202/408-5296; email infopcsd@aol.com).

May 10-14: 2nd International Symposium on Ionizing Radiation, Ottawa, Ontario, Canada. For more information, call 613/237-2324 or email kjones@thewillowgroup.com.

June 6-10: American Nuclear Society Annual Meeting, Boston, MA. For more information see their web site http://www.ans.org/meetings/.

June 14-17: VALues on Decision On Risk (VALDOR), Stockholm, Sweden. For more information contact Kjell Andersson (46 8 510 147 55 voice; 46 8 510 147 56 fax; email kjell.andersson@karita-konsult.se).

Aug. 22-25: International Topical Meeting on "Probabilistic Safety Assessment", Washington, D.C. Sponsored by The American Nuclear Society. For more information see the web site http://www.enre.umd.edu/psa99/.

— CALL FOR PAPERS —

Sept. 28 - Oct. 1: 1999 Center for Chemical Process Safety Annual Conference and Workshop on Modeling the Consequences of Accidental Releases of Hazardous Materials, San Francisco, CA. For more information contact Bob Perry (212/591-8375; email conf99@aiche.org; web site: http://www.aiche.org. **Abstracts due Feb. 26.**

For more events, see "Calendar" on our web site http://riskcenter.doe.gov

NEWS FROM PAST EVENTS

SOCIETY FOR RISK ANALYSIS ANNUAL MEETING 1998

By Regina Lundgren, Pacific Northwest National Laboratory

The difficulties of risk communication and the connection between risk assessment and life-cycle assessment were key themes at the 1998 annual meeting of the Society for Risk Analysis (SRA). This meeting, held in Phoenix December 6-9, attracted more than 400 attendees from government, academia, and industry.

Lester Lave (Carnegie Mellon University) received the 1998 Distinguished Achievement Award. His alternative life-cycle analysis of the environmental and human risks/costs of electric cars recently made the *New York Times*. His presentation described the need to connect the traditional approaches of risk assessment with the emerging science of life-cycle analysis to yield better results for decision makers.

In another session, Caron Chess of Rutgers University described the melding of organizational theory and risk communication. She researched characteristics of organizations that successfully carry out risk-related stakeholder involvement. One characteristic is the organization's perception of increased threat if involvement is not carried out (threat of a lawsuit, unfavorable press, etc.). Another characteristic is the close association between those who manage risk and those who communicate it (the closer, the better).

A group of scientists led by J. Beach (McLaren/Hart, Inc., Alameda, California) also presented results of a study of background risks to children in California from lead exposures in the home. Through use of the California Lead-Spread model and Monte Carlo techniques, they concluded the default parameters may underestimate background exposures to lead and that indoor dust is an important contributor to lead exposure in the children studied.

For more information, view the SRA web site at http://www.sra.org or call 703/790-1745.

ABOUT *RISK EXCELLENCE NOTES*

Risk Excellence Notes is a bi-monthly risk newsletter published by the U.S. Department of Energy's (DOE) Center for Risk Excellence and Lane Environmental, Inc. Contributing editors from many different government sectors, non-profit organizations, and citizen groups enhance the newsletter's ability to inform the risk community of current risk activities and information.

Submittal of articles to *Risk Excellence Notes* is always welcomed. Please send submittals, comments and address changes to:

Risk Excellence Notes
c/o Lane Environmental, Inc.
P.O. Box 925
Richland, WA 99352

Email: lane@oneworld.owt.com
Phone: 509/942-9053
Fax: 509/942-0743

Risk Excellence Notes *is funded by the U.S. Department of Energy's Center for Risk Excellence, Lane Environmental, Inc., Pacific Northwest National Laboratory, and through the support of each editorial board member's home organization.*

Risk Excellence Notes
c/o Lane Environmental, Inc.
P.O. Box 717
Batavia, IL 60510-0717